

## **Amendments to the Claims:**

This listing of claims will replace all prior versions, and listings of claims, in the application.

### **Listing of Claims**

Claim 1 (canceled)

Claim 2 (canceled)

Claim 3 (original): A method for determining operating conditions in a medical pump having a cassette with a pumping chamber, comprising:  
monitoring the pump cycle with a position sensor;  
starting a testing timer for a pre-determined test time at a specified portion of the pump cycle;  
closing the pumping chamber to flow during at least a portion of the specified portion of the pump cycle;  
acquiring a plurality of pressure reference values during a first portion of test time from a single pressure sensor;  
calculating and storing a pressure anchor value by averaging the reference values;  
acquiring a pressure data value from the pressure sensor;  
calculating and storing a resultant value by subtracting the anchor value from the data value;  
repeating the steps of acquiring the pressure data value and calculating and storing the resultant value until the pre-determined test time has expired;  
calculating a test value by averaging the resultant values; and  
comparing the test value with pre-determined threshold value to determine the operating condition of the pump.

Claim 4 (original): The method of claim 3, wherein the operating condition determined is normal type, leak type, or air stroke.

Claim 5 (original): The method of claim 3, further comprising the step of smoothing the pressure reference values and pressure data values prior to performance of the calculation steps.

Claim 6 (original): The method of claim 3, wherein the specified portion of the pump cycle is adjusted to reduce system variation sensitivity.

Claim 7 (original): The method of claim 3, wherein the first portion of test time is adjusted to shorten the delay between the steps of starting the testing timer at the specified portion of the pump cycle and acquiring the pressure data value.

Claim 8 (original): The method of claim 3, wherein the specified portion of the pump cycle and the first portion of test time are adjusted to vary the pressure anchor value.

Claim 9 (original): The method of claim 3, wherein portions of the pressure reference values and pressure data values are weighted to adjust the emphasis of these portions.

Claim 10 (canceled)

Claim 11 (canceled)

Claim 12 (canceled)

Claim 13 (canceled)

Claim 14 (canceled)

Claim 15 (canceled)

Claim 16 (canceled)

Claim 17 (canceled)

Claim 18 (canceled)

Claim 19 (canceled)

Claim 20 (canceled)

Claim 21 (canceled)

Claim 22 (canceled)

Claims 23 (canceled)

Please cancel claims 1, 2, and 10-23.